

REMARKS

Claims 19-59 are pending in this application. By this Amendment, claims 33, 45, 52 and 58 are amended. No new matter is added. Support for these amendments can be found, for example, at page 33, lines 13-14.

Entry of the amendments is proper under 37 C.F.R. §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary. Entry of the amendments is thus respectfully requested.

I. Allowed and Allowable Claims

Applicant appreciates the Office Action's indication that claims 19-32, 46-51 and 54-57 are allowed and that claims 36, 39 and 43 are allowable.

II. Claim Rejection Under 35 U.S.C. §112

The Office Action rejects claim 45 under 35 U.S.C. §112, second paragraph. The Examiner is thanked for identifying the informality in claim 45. By this Amendment, claim 45 is amended to overcome the rejection. Applicant requests withdrawal of the rejection.

III. Claim Rejections Under 35 U.S.C. §102 Over Matsushita and Shimizu

The Office Action (i) rejects claims 33, 37, 38, 40, 41, 58 and 59 under 35 U.S.C. §102(a) over U.S. Patent Publication No. 2002/0126390 to Matsushita et al. (Matsushita); and (ii) rejects claims 33, 37, 38, 40, 41, 58 and 59 under 35 U.S.C. §102(b) over Japanese Patent Publication No. 2000-098102 to Shimizu. Applicant respectfully traverses the rejections.

Matsushita discloses a multiple lens array (MLA) comprising transparent resin layers having different refractive indices n_1 - n_3 (Fig. 4); (paragraphs [0079]-[0080]). As shown in Fig. 4 and Fig. 5a, the lens resin layer 44 has multiple lenses on both sides. Figs. 5b-5c show two lens resin layers 44, each having a single side having multiple lenses, the lens resin layers 44 separated by other layers (e.g., transparent adhesive 45).

Shimizu discloses separate micro-lens arrays 13 and 14 separated by glass substrate 15 (Fig. 4).

Thus, Matsushita and Shimizu fail to disclose first and second optical members separated by a space filled with gas as recited in independent claims 33 and 58. Applicant requests withdrawal of the rejections.

IV. Claim Rejection Under 35 U.S.C. §103 Over Matsushita and Yamaguchi

The Office Action rejects claims 34 and 35 under 35 U.S.C. §103(a) over Matsushita in view of Japanese Patent Publication No. 07-098402 to Yamaguchi et al. (Yamaguchi). Applicant respectfully traverses the rejection. These claims are patentable at least due to their dependence on claim 33.

Furthermore, Yamaguchi fails to disclose the features of claim 34. Yamaguchi discloses an optical element comprising a one plane distribution refractive-index lens element 32 (drawing 40) which rotates incoming light (Fig. 41). The refractive index varies gradually across the cross section (paragraph [0100]). The refractive index value n_0 is about 1.6 in the center and the refractive index difference between the center and the edge portion is 0.05 (paragraph [0100]). Thus, the refractive index difference of about 0.05 in paragraph [0100] is not the refractive index difference between a first optical member and a second optical member.

Lens element 32 of Yamaguchi is a gradient index lens (GRIN lens). GRIN lenses are optical elements in which the refractive index varies continuously (see Fig. 40). In contrast, in

claim 33, the first and second optical members are separated from each other by a gas and have different refractive indices. By separating the first and second optical elements with gas, the refractive indices of the first and second optical members vary discretely. Thus, the claim 34 combination of features is different from what is disclosed or suggested by Matsushita and Yamaguchi.

Applicant requests withdrawal of the rejection.

V. Claim Rejections Under 35 U.S.C. §103 Over Shimizu, Tanitsu '394, and Tanitsu '579

The Office Action rejects claims 42 and 44 under 35 U.S.C. §103(a) over Shimizu in view of either U.S. Patent No. 6,741,394 to Tanitsu et al. (Tanitsu '394) or German Patent Publication No. DE10062579 to Tanitsu et al. (Tanitsu '579). Applicant respectfully traverses the rejections.

The Tanitsu references do not overcome the deficiencies of Shimizu. Thus, claims 42 and 44 are patentable over Shimizu in view of either Tanitsu reference for the same reasons that base claim 33 is patentable over Shimizu. Applicant requests withdrawal of the rejections.

VI. Claim Rejection Under 35 U.S.C. §103 Over Tanitsu '349, Matsushita and Shimizu

The Office Action rejects claims 52, 53, 58 and 59 under 35 U.S.C. §103(a) over Tanitsu '349 in view of either Matsushita or Shimizu. The rejections are respectfully traversed.

Tanitsu '394 discloses an optical integrator 23 including a plane-parallel plate 23c between first and second micro lens groups/bundles 23a and 23b (Fig. 8; col. 17, lines 11-28) which are integrally connected. In other embodiments, Tanitsu '394 discloses optical integrator 33 having first and second micro fly's eye lenses 33a and 33b in series. Each of the

first and second micro fly's lenses 33a and 33b have multiple lenses on both sides which are aligned optically (Fig. 9; col. 19, lines 40-58).

Regarding independent claims 52 and 58, Tanitsu '394 fails to disclose the index of refraction for a second optical member is larger than the index of refraction for a first optical member. This deficiency is not cured by either Matsushita or Shimizu.

Matsushita discloses that the index of refraction of the transparent resin layer having the micro lens arrays is n_2 (Fig. 4; paragraph [0080]). Because both micro lens arrays are on the same transparent resin layer, Matsushita fails to cure the deficiencies of Tanitsu '394.

The cited sections of Shimizu are paragraphs [0028], [0047], and [0058]. Paragraph [0028] discusses the constraints on the refractive indices of resin layers formed with micro-lens arrays, but does not explicitly disclose the index of refraction for a second optical member is larger than the index of refraction for a first optical member as claimed. Paragraph [0047] discusses the micro-lens array substrate 40 of Figs. 8 and 9, and discusses that the refractive indices can differ, but does not disclose which micro-lens array has a higher index of refraction. Paragraph [0058] discusses the indices of refraction n_1 and n_2 , but this is in reference to two resin layers between which a single micro-lens array is formed, not in reference to the indices of refraction of two separate micro lens arrays. Thus, Shimizu fails to cure the deficiencies of Tanitsu '394.

Applicant respectfully requests withdrawal of the rejections.

VII. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Date: May 11, 2007

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